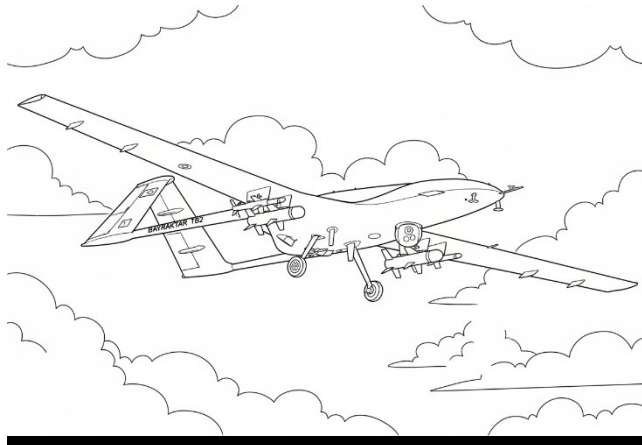


Bayraktar TB2



IDENTITY & DESIGNATION

Official Designation: Bayraktar TB2

Manufacturer: Baykar Defense (Istanbul, Turkey)

Country of Origin: Turkey

Year Introduced: 2014 (operational 2015+)

Proliferation Status: Exported to 30+ countries including Ukraine, Azerbaijan, Poland, Qatar, Ethiopia, Libya

CLASSIFICATION

Domain: Air

Category: Military — Medium Altitude Long Endurance (MALE)

Sub-Category: Tactical ISR/Strike UAV

Terminal Mode: Recoverable (conventional runway landing)

PHYSICAL SPECIFICATIONS

Weight: ~700 kg (max takeoff)

Wingspan: 12 m

Length: 6.5 m

Payload Capacity: ~150 kg (4 hardpoints under wings)

Airframe: Carbon fiber / Kevlar composite

PROPULSION & PERFORMANCE

Propulsion Type: Rotax 912 piston engine (100 hp) — rear pusher

Max Speed: 220 km/h

Cruise Speed: 130 km/h

Max Range: 150 km from GCS (line-of-sight link)

Endurance: 27 hours

Service Ceiling: 7,620 m (25,000 ft)

GUIDANCE, NAVIGATION & CONTROL

Control Link: C-band LOS data link (Baykar proprietary)

Navigation: GPS/INS + GLONASS

Satellite Link: No (LOS only; limits operational range)

Autonomy Level: Semi-autonomous — autonomous takeoff/landing/waypoint flight; human-in-loop for weapons

Operator Skill: High — military crew: pilot, sensor operator, mission commander

Fiber-Optic Option: No

WEAPONS & PAYLOADS

Hardpoints: 4 under-wing

Primary Munitions: MAM-L (smart micro munition, 22 kg, laser-guided)

Additional: MAM-C (6.5 kg), Roketsan UMTAS (L-UMTAS anti-tank)

ISR Sensor: WESCAM MX-15D or Aselsan CATS EO/IR turret with laser designator

COUNTERMEASURE VULNERABILITY PROFILE

RF Jamming: MODERATE — LOS data link can be jammed; encrypted but C-band is targetable

GPS Spoofing: MODERATE — GPS-dependent; INS provides limited backup

EMI/EMC Attack: MODERATE — Some military-grade hardening but not fully mil-spec on all systems

Microwave Attack: MODERATE — More hardened than consumer but still vulnerable at close range

Laser DEW: MODERATE — Moderate speed, composite airframe has some resistance

Kinetic Intercept: HIGH — Large radar signature, moderate speed; conventional SHORAD effective

Cyber / Hack: MODERATE — Encrypted link but single-channel C-band

Overall Vulnerability Rating: MODERATE

CRUISE MISSILE CONVERGENCE NOTES

The TB2 sits at the mid-point of the convergence spectrum. It shares GPS/INS navigation with cruise missiles, carries precision-guided munitions with terminal seekers, and operates at ranges and endurance that overlap with subsonic cruise missile profiles. The critical difference: it is reusable and recoverable, making it an ISR platform that can strike. This dual-role capability exceeds most cruise missiles, which are single-use. Its vulnerability to conventional air defense (demonstrated in Libya and later in Ukraine against Russian SAMs) parallels cruise missile attrition rates. The TB2's real contribution to convergence: it democratized precision strike capability for medium-sized militaries.

OPERATIONAL HISTORY

Gained legendary status during the 2020 Nagorno-Karabakh conflict (Azerbaijan vs. Armenia), destroying armored columns and air defense systems. Highly effective in Libya (GNA operations). Mixed results in Ukraine — devastating early in the conflict, became more vulnerable as Russian air defense adapted. TB2 demonstrated that \$5M drones could destroy \$100M+ air defense systems, transforming the economics of warfare.

SOURCES & CROSS-REFERENCES

Wikimedia:

https://commons.wikimedia.org/wiki/Category:Bayraktar_TB2

Manufacturer: <https://baykartech.com>

Cross-Ref: See: MQ-9 Reaper (US equivalent class), Shahed-136 (cost-spectrum opposite)